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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,420	07/19/2001	David H. Gracias	H00498/70151 TJO	7277
23628	7590	08/06/2004	EXAMINER	
WOLF GREENFIELD & SACKS, PC FEDERAL RESERVE PLAZA 600 ATLANTIC AVENUE BOSTON, MA 02210-2211			KIM, PAUL D	
			ART UNIT	PAPER NUMBER
			3729	18

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/909,420

**Applicant(s)**

GRACIAS ET AL.

**Examiner**

Paul D Kim

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 16-42 is/are pending in the application.
- 4a) Of the above claim(s) 16-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>13</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. This office action is a response to the amendment filed on 10/31/2003.

***Examiner's Comment***

2. Upon further consideration, examiner hereby withdraws the last final office action in Paper No. 11. In view of the decision on the petition on 4/2/2004, the finality of Paper No. 11 is hereby withdrawn.

***Election/Restrictions***

3. Newly submitted claims 16-42 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Species A, drawn to a non-predeterministic, non-planar arrangement of components for claims 1-9.

Species B, drawn to at least one of the first, second, third and forth components has a mating surface that is rotationally symmetric for claims 16-24.

Species C, drawn to Fig. 3 (E-I) as to at least electric circuit comprises an I/O connection for an integrated circuit for claim 25-33.

Species D, drawn to a porous non-planar arrangement of components for claims 34-42.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 16-42 are withdrawn from consideration

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as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

4. This application contains claim 16-42 drawn to an invention nonelected in Paper No. 18. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As per claim 1 the phrase “a non-predeterministic, non-planar arrangement of components” as recited in line 3 was not described in the specification as originally filed and appear to be new matter.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1 the phrase "a non-predeterministic, non-planar arrangement of components" as recited in line 3 renders the claim vague and indefinite. It is unclear as to what the non-predeterministic arrangement of components are meant. There is no such a detail description of the non-predeterministic arrangement of components in the specification. Examiner also could not find a definition of the "non-predeterministic" in the dictionary.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Bowden et al. (US PAT. 6,507,989).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e)

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might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claim 1 Bowden et al. teach a method of self-assembly of mesoscale object comprising step of: allowing a the first, second, third and forth of components (90,94,102 of Fig. 4 or 140 of Fig. 5) in a non-planar arrangement of component and forming at least one electrical circuit that traverses at least a portion of the first, second, third and forth components (col. 1, line 18 to col. 10, line 16).

As per claim 2 Bowden et al. also teach that the first, second, third and forth components to assemble under a set conditions to form an interconnection assembly (col. 2, lines 61-65).

As per claim 3 Bowden et al. also teach that the first, second, third and forth components includes a mating surface that matches a mating surfaces of at least one other of e first, second, third and forth components (col. 2, lines 43-49).

As per claim 4 Bowden et al. also teach that the allowing the first, second, third and forth of components (90,94,102 of Fig. 4 or 140 of Fig. 5) in a non-planar arrangement of component and forming at least one electrical circuit that traverses at least a portion of the first, second, third and forth components (col. 1, line 18 to col. 10, line 16).

As per claim 5 Bowden et al. also teach that the first, second, third and forth of components undergo random contact interaction with each other until the non-planar arrangement of component is formed as shown in Fig. 5 and 10C (col. 4, lines 32-38).

As per claim 6 Bowden et al. also teach that each mating surface of the first, second, third and forth of components is matched with the other mating surfaces in a fluid such as in water (col. 10, lines 1-4).

As per claims 7 and 8 Bowden et al. also teach that each of the first, second, third and forth of components is electrically connected by an electrical conductor (114) to form an electrical circuit as shown in Fig. 4 (col. 8, line 53 to col. 9, line 45).

As per claim 9 Bowden et al. also teach that the first mating surface is allow to fasten to the second mating surface in a manner that is irreversible under the set condition (col. 2, lines 61-65).

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground of rejection.

Applicant argues that the prior art of record fails to disclose the claimed invention such as a non-prederterministic electric circuits are described. Base on the 112 first paragraphs as set forth above, the limitation was not described in the specification as originally filed and appear to be new matter. Also, examiner can see the electric circuits of Bowden et al. as the non-prederterministic electric circuits.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pdk



**A. DEXTERTUGBANG**  
**PRIMARY EXAMINER**